



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

## ALGEBRA.

---

168. Proposed by W. J. GREENSTREET, M. A., Editor of The Mathematical Gazette, Stroud, England.

If  $n$ ,  $n+2$ ,  $n+6$ ,  $n+8$ ,  $n+12$  are all primes, find the form of  $n$ .

169. Proposed by JOHN M. COLAW, A. M., Monterey, Va.

Solve  $x^2 + y + z = a \dots (1)$ ,

$x + y^2 + z = b \dots (2)$ ,

$x + y + z^2 = c \dots (3)$ .

## GEOMETRY.

---

191. Proposed by J. V. McADAMS, St. Louis, Mo.

Trisect any angle by means of the hypocycloid.

192. Proposed by ALFRED HUME, C. E., D. Sc., Professor of Mathematics, University of Mississippi, University, Miss.

Of all triangles with a common base and inscribed in the same circle, the isosceles is the maximum and has the maximum perimeter. Prove geometrically.

## CALCULUS.

---

158. Proposed by L. C. WALKER, A. M., Graduate Student, Leland Stanford University, Cal.

It is required to cut a hole  $a$  inches square, for a crank shaft, through the center of a grindstone  $b$  inches thick at the outer edge,  $c$  inches thick at the center, and  $d$  inches in diameter. How many cubic inches will have to be cut out?

159. Proposed by F. P. MATZ, Sc. D., Ph. D., Professor of Mathematics and Astronomy in Defiance College, Defiance, Ohio.

$$\text{Solve } \frac{d^2 u}{dx^2} = \frac{1}{m} \left( \frac{du}{dt} \right).$$

## MECHANICS.

---

148. Proposed by G. H. HARVILL, A. M., Malakoff, Texas.

Show that a law of density for points in space may be assumed such that the joint mass of any two points which are *electrical images* of each other in respect to a given sphere may be constant, and that their centers of gravity should lie on the surface of the sphere.

149. Proposed by W. J. GREENSTREET, M. A., Editor of The Mathematical Gazette, Stroud, England.

From two points in the same horizontal line hangs a light inextensible string, on which are threaded two beads of equal mass. The beads start from rest in the position in which the terminal portions of the string are vertical and move symmetrically towards each other in the vertical plane. Find the path of each bead, and the tension of the string at any point in the path.